UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/596,019	05/25/2006	Kouji Nishioka	P30024	1772

7055 7590 08/20/2009

GREENBLUM & BERNSTEIN, P.L.C.
1950 ROLAND CLARKE PLACE
RESTON, VA 20191

EXAMINER	
GRAMLING, SEAN P	

ART UNIT	PAPER NUMBER
2875	

NOTIFICATION DATE	DELIVERY MODE
08/20/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gbpatent@gbpatent.com
pto@gbpatent.com

Office Action Summary	Application No.	Applicant(s)	
	10/596,019	NISHIOKA ET AL.	
	Examiner	Art Unit	
	SEAN P. GRAMLING	2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 May 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/27/09*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Amendment

Acknowledgment is made of Amendment filed May 4, 2009. Claims 1-7 and 14 are amended. Claims 17-18 are new. Claims 1-18 are pending.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claims 1-4 and 7-12 and 14-15** are rejected under 35 U.S.C. 102(e) as being anticipated by *Park et al* (US 2005/0280014).

3. Regarding claim 1, Park discloses a light emitting device using an LED chip 102 comprising a mounting substrate 110 having a recess 124 and having a wiring portion that supplies electric power to the LED chip, the LED chip being mounted on a bottom of the recess; a wavelength converter 126 disposed so as to cover the recess and an edge area 126a around the recess and that is excited by light emitted from the LED chip to emit light of a wavelength different from an excitation wavelength; and an emission controller 130 provided at a light output side of the wavelength converter so as to allow emission of light coming from an area of the wavelength converting member that

corresponds to the recess and to prevent emission of light coming from an area of the wavelength converting member that corresponds to the edge area around the recess (see Figures 2-9 and paragraphs [0041]-[0077]).

4. Regarding claim 2, the emission controller 130 in Park comprises an optical member disposed at the light output side of the wavelength converter and having a light input portion facing the light output side of the wavelength converter, the light input portion of the optical member having a recessed space such that an opening of the light input portion has substantially a same shape as an opening of the recess in the mounting substrate (see at least Figure 2).

5. Regarding claim 3, the emission controller 130 in Park comprises a light blocking frame member (collectively 134, 136, 138) disposed on the light output side of the wavelength converter at a location corresponding to the edge are around the recess, the light blocking frame member having an opening of substantially the same shape as the opening of the recess (see Figures 2-5).

6. Regarding claim 4, the wavelength converter 126 in Park comprises a material of a high elasticity, an outer edge area 126a of the wavelength converter being compressed by the light blocking frame member pressed against the wavelength converter (see Figure 3).

7. Regarding claim 7, the emission controller 130 in Park comprises a lens 132 disposed over the mounting substrate to have an optical axis coinciding with an optical axis of the LED chip 102, and wherein the light emitting device further comprises: a wiring board 112 having a wiring portion (see Figures 4 and 9, the wiring board 112

inherently has a wiring portion which is connected to and energizes the LED chip 102 through leads 128) fixed to the mounting substrate to supply electric power to the LED chip; and a lens holder (collectively 134, 136, 138) that positions and fixes the lens on the wiring board 112, wherein a portion of the lens holder fixed to the wiring is located inside as compared with an outer diameter of the lens.

8. Regarding claim 8, the lens holder (at least portion 138) in Park is tapered toward the mounting substrate 110 (see Figure 3).

9. Regarding claim 9, the lens 132 in Park comprises a hybrid lens (see Figure 3).

10. Regarding claim 10, one of a top face and a side face of the mounting substrate 110 in Park is fitted to the lens holder (see Figure 3).

11. Regarding claim 11, the lens holder (134,136,138) in Park is engaged in one of grooves (grooves under protrusion 120 that are engaged by portion 138 of the lens holder) and through holes formed in the wiring board (see Figures 3-4).

12. Regarding claim 12, the mounting substrate and lens in Park are positioned and fixed on the wiring board via a same fixer 120 (see Figure 4).

13. Regarding claim 14, a protrusion 138 in Park is formed on the under surface of the lens holder and is engaged in one of a through ole and a groove (under protrusion 120) formed in the wiring board (see Figure 4).

14. Regarding claim 15, Park discloses a light extraction increasing portion 132 provided on a light output side of the LED chip to increase the efficiency of extraction of light from the LED chip by being combined with the LED chip; and a sealing resin 126 that fills the recess in the mounting substrate where the LED chip is mounted to seal the

recess, wherein a top of the light extraction portion 132 in Park is located higher than a top of a wall of the recess (see Figure 3).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

16. **Claims 5-6, 13 and 16-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Park et al* (US 2005/0280014) and further in view of *Lowery* (US 6,504,301).

17. Regarding claim 5, the light output side of the wavelength converter 126 in Park is concave rather than convex (see Figure 3). However, convex wavelength converters are well-known in the art and are specifically taught in Lowery (see Lowery, Figure 5). It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the wavelength converter 126 in Park convexly as taught by Lowery in order to converge the light emitted from the converter, and since it has been held that lacking any criticality, changing the form or shape of prior art parts does not make the claimed invention patentable over that prior art (*In re Dailey*, 149 USPQ 47).

18. Regarding claim 6, Park does not specify that the density of the wavelength converter 126 increase toward the center. However, it has been held that lacking any

criticality, changing the form or shape of prior art parts does not make the claimed invention patentable over that prior art (*In re Dailey*, 149 USPQ 47).

19. Regarding claim 13, Park discloses a lead electrode (one of leads 128) provided on the mounting substrate to be connected to the wiring portion of the wiring board 112 and a wiring land (other of lead 128) that has a substantially same shape as the lead electrode and that is formed on the wiring portion of the wiring board (see Figure 4) and a land 120 that has substantially a same shape as the fixed portion 138 of the lens holder and that is formed on the wiring board, but does not specifically teach a metal foil for soldering that is provided on an under surface of a fixed portion of the lens holder. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include metal foil for additional bonding strength between lens holder (134, 136, 138) and the mounting substrate 110.

20. Regarding claim 16, the mounting substrate 110 in Park has a second recess 122 around the recess so that the resin can flow in the second recess (see Figures 3-4).

21. Regarding claim 17, Park discloses a light emitting device using an LED chip 102 comprising a mounting substrate 110 having a recess 124 and having a wiring portion that supplies electric power to the LED chip, the LED chip being mounted on a bottom of the recess; a wavelength converter 126 disposed so as to cover the recess and an edge area 126a around the recess and that is excited by light emitted from the LED chip to emit light of a wavelength different from an excitation wavelength; and an emission controller 130 provided at a light output side of the wavelength converter so as to allow emission of light coming from an area of the wavelength converting member that

corresponds to the recess and to prevent emission of light coming from an area of the wavelength converting member that corresponds to the edge area around the recess (see Figures 2-9 and paragraphs [0041]-[0077]). The wavelength converter 126 in Park has a cross section that is concave rather than convex at the light output side (see Figure 2). However, wavelength converters with convex cross sections at the light output side are well-known in the art and are specifically taught in Lowery (see Lowery, Figure 5). It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the wavelength converter 126 in Park with a convex cross section at the light output side as taught by Lowery in order to converge the light emitted from the converter, and since it has been held that lacking any criticality, changing the form or shape of prior art parts does not make the claimed invention patentable over that prior art (*In re Dailey*, 149 USPQ 47).

22. Regarding claim 18, Park discloses a light emitting device using an LED chip 102 comprising a mounting substrate 110 having a recess 124 and having a wiring portion that supplies electric power to the LED chip, the LED chip being mounted on a bottom of the recess; a wavelength converter 126 disposed so as to cover the recess and an edge area 126a around the recess and that is excited by light emitted from the LED chip to emit light of a wavelength different from an excitation wavelength; and an emission controller 130 provided at a light output side of the wavelength converter so as to allow emission of light coming from an area of the wavelength converting member that corresponds to the recess and to prevent emission of light coming from an area of the wavelength converting member that corresponds to the edge area around the recess

(see Figures 2-9 and paragraphs [0041]-[0077]). Park does not specify that the density of the wavelength converter 126 increase toward the center. However, it has been held that lacking any criticality, changing the form or shape of prior art parts does not make the claimed invention patentable over that prior art (*In re Dailey*, 149 USPQ 47).

Response to Arguments

23. Applicant's arguments filed May 4, 2009 with respect to the rejection of claims 1-2 and 5-16 under 35 U.S.C. 103 (a) as being unpatentable over Lowery in the previous Office Action have been fully considered and are persuasive. Therefore the rejections have been withdrawn.

24. Applicant's arguments with respect to the rejection of claims 1-4 as being anticipated by Park have been fully considered but they are not persuasive. Examiner respectfully disagrees with Applicant's submission that the wavelength converter 126 in Park is not disposed so as to cover the recess and an edge area around the recess. Examiner respectfully directs Applicant to Figure 8 of the drawings in Park which clearly illustrates that the wavelength converter 126 covers recess 124 and an edge area around the recess. Examiner also respectfully disagrees with Applicant's submission that the emission controller 130 does not prevent emission of light coming from an area of the wavelength converter 126 that corresponds to the edge area around the recess. Examiner respectfully directs Applicant to Figure 3 which illustrates that the lens 132 portion of emission controller 130 serves to prevent light from reaching the area of the wavelength converter 126 that corresponds to the edge area around the recess. Thus,

light does not come from an area of the wavelength converter 126 which corresponds to the edge area around the recess. Accordingly, the rejections of claims 1-4 under 35 U.S.C. 102 (e) as being anticipated by Park are maintained. Moreover, a new rejection is made against claims 5-18 in light of a new interpretation of Park and additional secondary references.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SEAN P. GRAMLING whose telephone number is (571)272-9082. The examiner can normally be reached on MONDAY-FRIDAY 7:30 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Sean P Gramling
Examiner
Art Unit 2875

/SPG/
/Sharon E. Payne/
Primary Examiner, Art Unit 2875